To EPA Office of Pesticide Registration:

Having reviewed the available Risk Assessment documents for carbaryl, it seems obvious to me that the uses for this pesticide should be further restricted in order to reduce known health risks and adverse ecological impacts. The re-registration process provides an excellent opportunity to acknowledge new scientific information regarding toxicity and human exposure routes. At a minimum, residential uses for carbaryl should be prohibited.

For the past 20 years I have farmed oysters on Willapa Bay in SW Washington State, successfully demonstrating the effectiveness of non-chemical aquaculture alternatives. Base on my experiences and observations, I want to focus the rest of my comments on the aquatic use of carbaryl. Please consider the following points:

1) The Carbaryl Summary provided with the Risk Assessment documents states that this pesticide is "a wide-spectrum non-selective compound." When applied to tideflats to control burrowing shrimp there are many other species that are also harmed. According to the Clean Water Act, the primary goal of the National Pollution Discharge Elimination System (NPDES)is to "prevent toxic discharges in toxic amounts." The current Supplemental Label for carbaryl and the NPDES permit issued by the Washington State Dept. of Ecology fail to meet this goal. The fate and persistence of carbaryl in the marine environment has been studied sufficiently by Ecology scientists to justify a high level of concern for the aquatic use of this biocide. EPA has referenced studies by Cynthia Stonick and Art Johnson which found unacceptable levels of drift and persistence in the mariine environment.

2) In the section titled "Ecological Risks" it is stated that the "risk to birds and freshwater fish is a concern," but there is no evaluation of risks to marine invertebrates and fish. It is well-known by Washington State investigators that fish and crab kills are often observed after carbaryl treatments. But that information is ignored when EPA states that "Acute risks for estuarine/marine fish do not exceed the Level of Concern for any scenario. Data are not available to assess chronic risks." Fortunately, there is new data available on chronic risks. In June, 2002, independent researchers Michael McNamara and Scott Mazzone conducted a study of long-term effects of carbaryl treatments, finding significant adverse effects on the benthis community. This study is attached below for review by EPA.

3)Washington State Dept. of Agriculture was delegated authority by EPA to issue a Special Local Needs permit for the aquatic use of carbaryl, a provision of FIFRA. But the monitoring requirements that accompany this authority have not been fulfilled during the many years that carbaryl has been used in Willipa Bay. WSDA has repeatedly failed to conduct studies ofpossible adverse environmental impacts. In July, 2000 there was substantial carbaryl drift across my oyster beds as the incoming tide flooded across a treated area, transporting carbaryl at least 1,000 feet downstream, as evidenced by a feeding frenzy of hundreds of birds feasting on poisoned shrimp, worms, fish, and crab. I called Ecology and Agriculture to observe the drift incident, but no staff were sent. Finally, I was able to persuade a biologist from the nearby Nahcotta Shellfish Lab (WDF&W) to observe and collect samples. Since WSDA has enforcement responsibility for pesticide violations, an investigation was initiated several weeks after the incident. The samples languished somewhere in a refrigerator for 8 weeks before

analysis was finally done, showing significant levels of carbaryl in the oysters (.36ppm, compared to the EPA safety threshold of .25ppm). However, WSDA invalidated the test results since samples were not collected in "Approved" containers. As part of the investigation, WSDA found that two individuals who applied the carbaryl did not have the required Aquatic Pesticide Applicators license. No fines were assessed, but the individuals were warned to get their licenses before spraying in the future.

Carbaryl has been used in this Bay for 38 years, and this was the only Investigation and Enforcement Action done by WSDA. Monitoring and enforcement has been lax. The Special Local Needs permit for carbaryl should be revoked by EPA.

In summary, there is ample evidence that the aquatic use of carbaryl presents acute and chronic ecological risks justifying a high level of Agency concern. The Supplemental Label allowing the application of carbaryl in Willapa Bay should be withdrawn. The Special Local Needs permit has been abused by inadequate monitoring, and should be discontinued. Spraying carbaryl on tideland is unwise and unnecessary.